

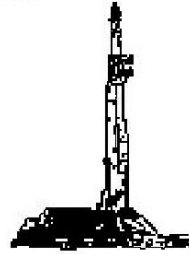
GOOLSBY BROTHERS
and associates, inc.

575 Union Blvd, Suite 208
Lakewood, CO 80228
303-945-2860 Office



Geological Wellsite
Supervision

www.goolsbybrothers.com



Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: **MULGA 29C-23HZ**
Well Id:
Location: **Sec. 23 T2N R67W Weld County, CO.**
License Number: **API:051233925300 AFE: 2094826** Region: **Wattenberg**
Spud Date: **June 05, 2014** Drilling Completed: **June 12, 2014**
Surface Coordinates: **275' FSL, 2176' FWL**
Lat. **40.1171525**, Long. **-104.8591747**, Sec. **23**, T2N R67W
Bottom Hole **1' FNL, 1555' FWL**
Coordinates: **Lat. 40.130852, Long. -104.861829, Sec. 23, T2NR67W**
Ground Elevation (ft): **4947'** K.B. Elevation (ft): **4964'**
Logged Interval (ft): **7000'** To: **12593** Total Depth (ft): **12593'**
Formation: **Codell**
Type of Drilling Fluid: **LSND (Polymer-Water)**
Printed by HORIZONTAL.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: **Anadarko Petroleum Corporation**
Address: **Granite Tower - 1099 18th St, Ste 1800**
Denver, CO 80202
CO Geologist, Tom Birmingham.

GEOLOGIST

Name: **George Bejan, Jousua Olsen**
Company: **Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)**
Address: **575 Union Blvd.**
Suite 208,
Lakewood CO. 80228

E-logs

MWD Gamma

Casing

Intermediate casing: 7", 26#, HTC 110 LTC, set at 7877'

Liner: 4 1/2", packer and assembly, 11.5#, HCP 110, LTC & D2X, set at 12593'

Comments

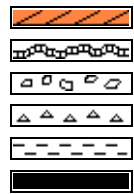
Drilling Contractor: H&P 311

Pumps 1 & 2: Gardner Denver PZ 11 6" x 11" (.0914 bbl/stk)

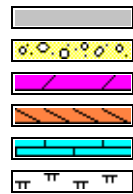
Rig Manager: Brandon Green

Drillers: Richard Norton, Christopher Beckstead

ROCK TYPES



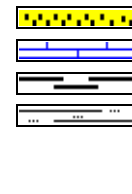
Anhy
Bent
Brec
Cht
Clyst
Coal



Oil sat.
Congl
Dol
Gyp
Lmst
Mrlst



Salt
Shale
Shcol
Shgy
Ss
Slst



Ss
Chalk
Carb sh
Slty sh

ACCESSORIES

MINERAL

	Anhy
	Arggrn
	Arg
	Bent
	Bit
	Brecfrag
	Calc
	Carb
	Chtdk
	Chtlit
	Dol
	Feldspar
	Ferrpel
	Ferr
	Glau
	Gyp
	Hvymin
	Kaol
	Marl

	Minxl
	Nodule
	Phos
	Pyr
	Salt
	Sandy
	Silt
	Sil
	Sulphur
	Tuff

FOSSIL

	Algae
	Amph
	Belm
	Bioclst
	Brach
	Bryozoa
	Cephal
	Coral

	Crin
	Echin
	Fish
	Foram
	Fossil
	Gastro
	Oolite
	Ostra
	Pelec
	Pellet
	Pisolite
	Plant
	Strom

STRINGER

	Chlkstg
	Anhy
	Arg
	Bent
	Coal

	Dol
	Gyp
	Ls
	Mrst
	Sltstrg
	Ssstrg

TEXTURE

	Boundst
	Chalky
	Cryxln
	Earthy
	Finexln
	Grainst
	Lithogr
	Microxln
	Mudst
	Packst
	Wackest

OTHER SYMBOLS

OIL SHOWS

	Even
	Spotted
	Ques
	Dead
	Vspotty
	near even

POROSITY TYPE

	Earthy
	Fenest
	Fracture
	Inter
	Moldic
	Organic

	Pinpoint
	Vuggy

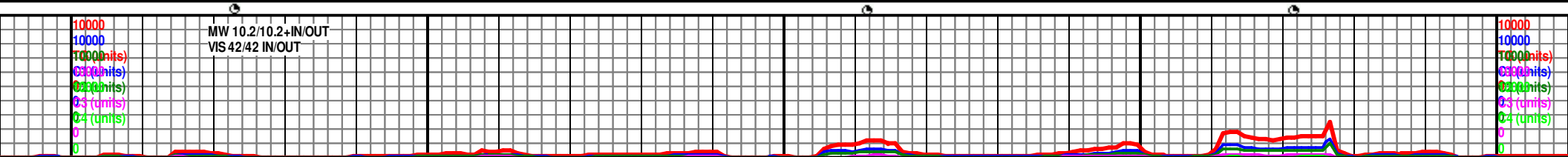
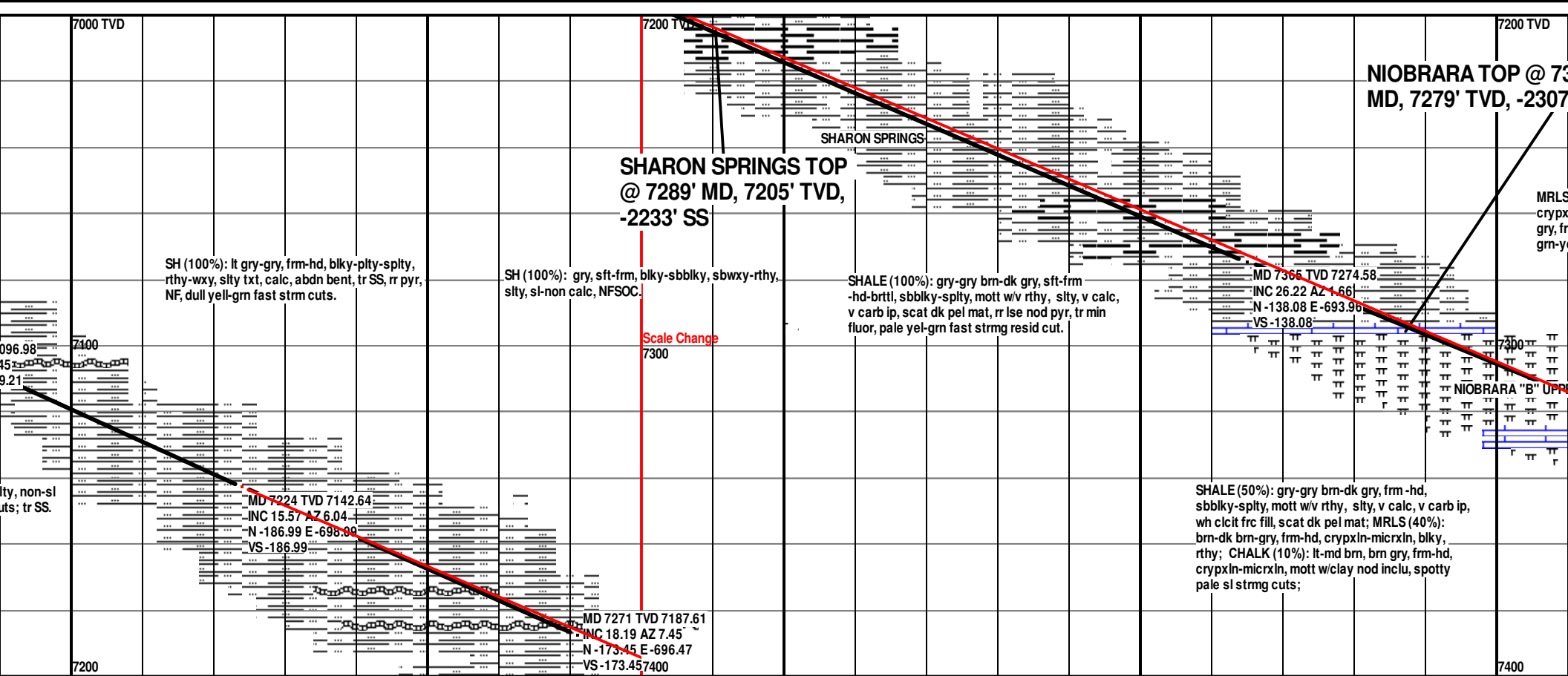
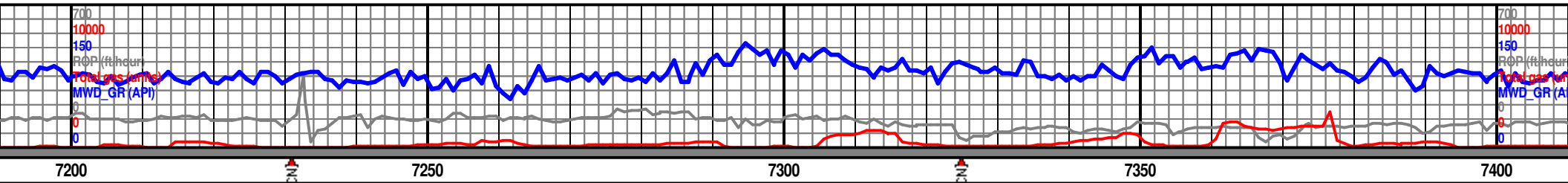
ROUNDING

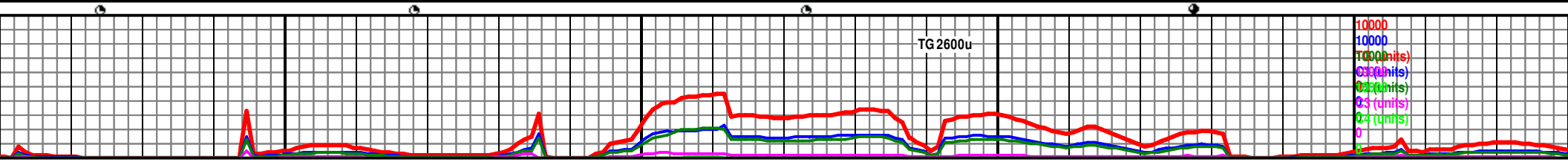
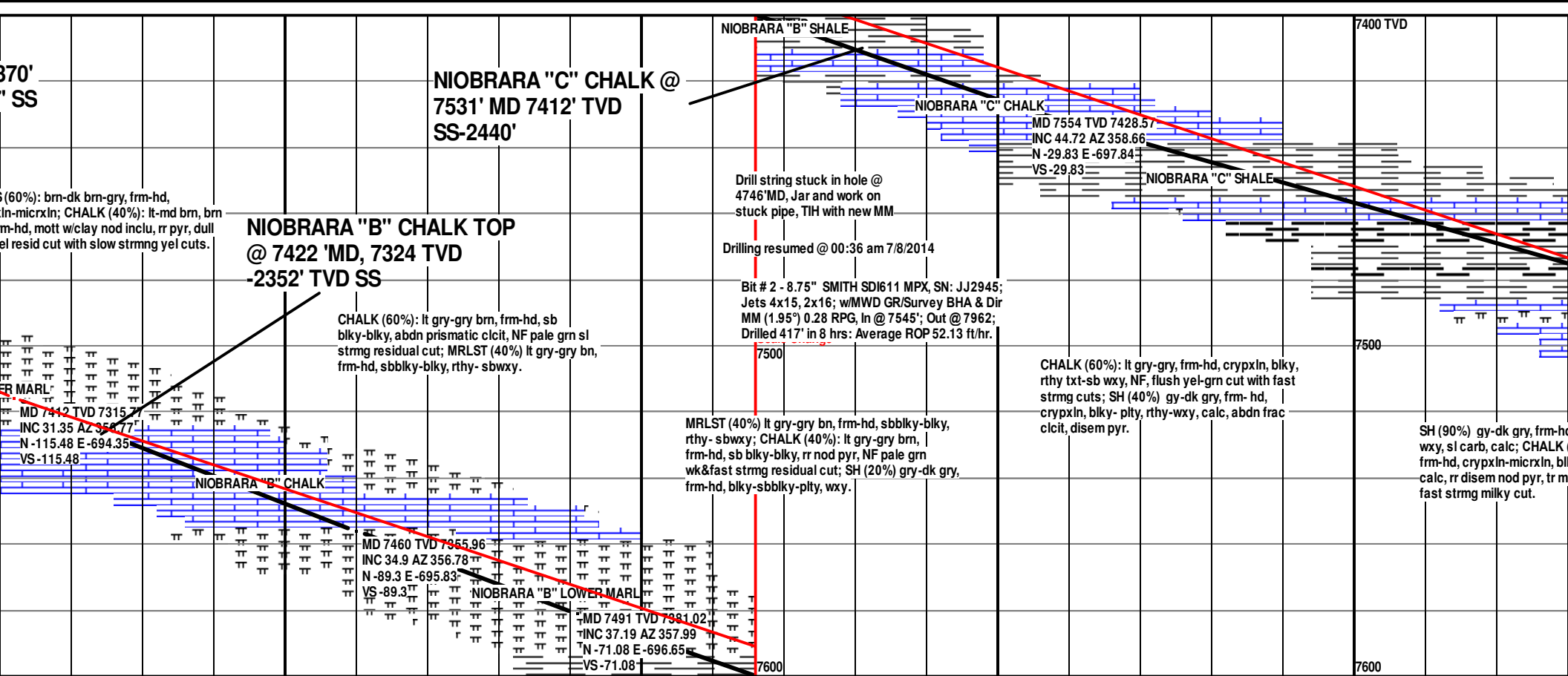
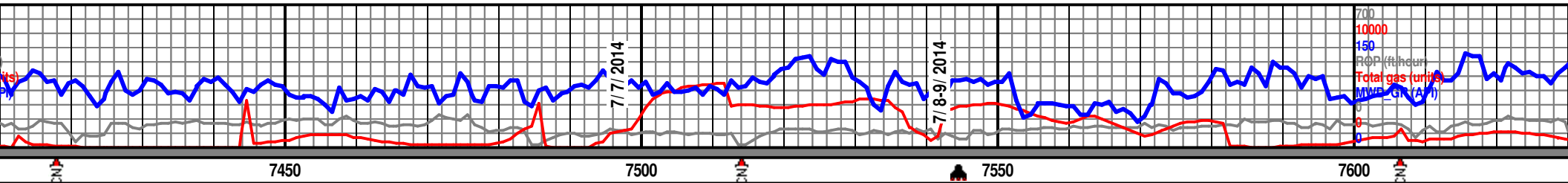
	Rounded
	Subrnd
	Subang

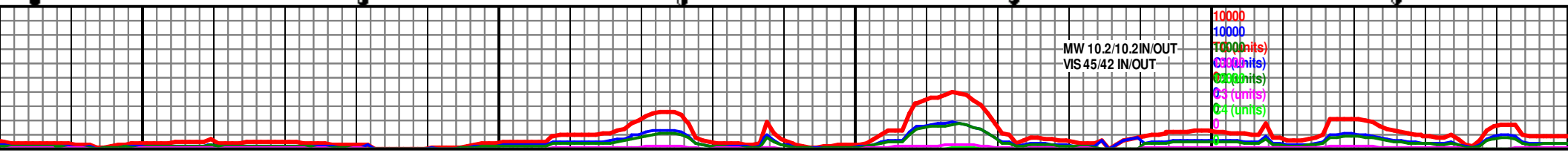
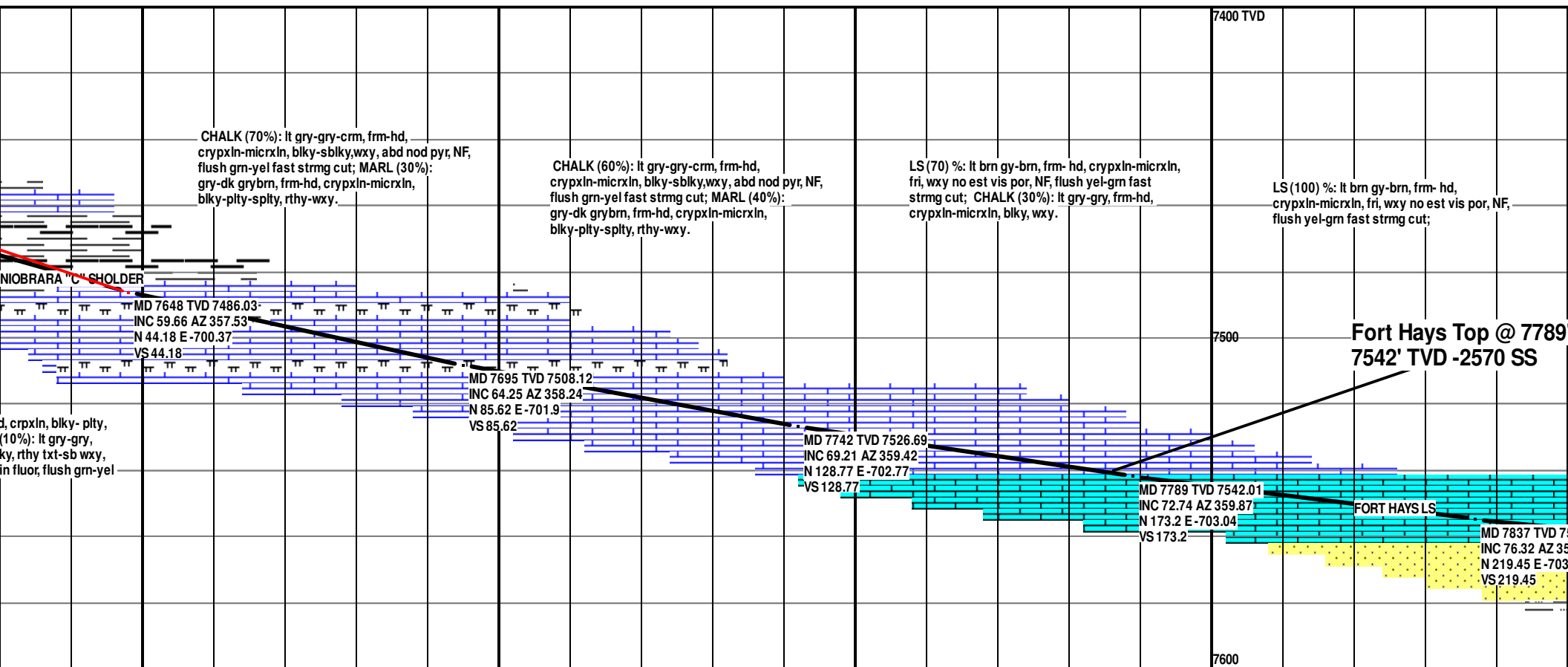
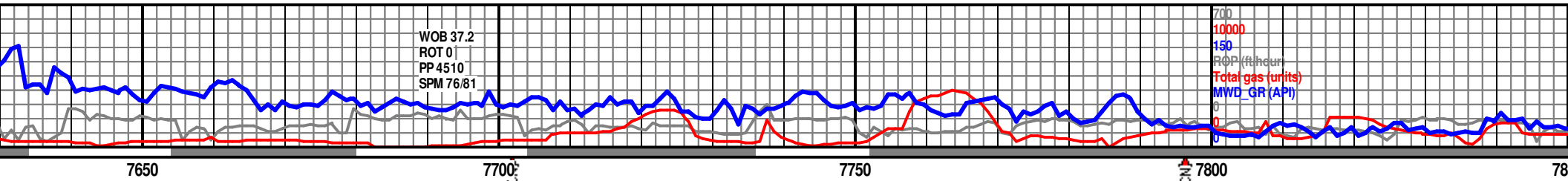
	Angular
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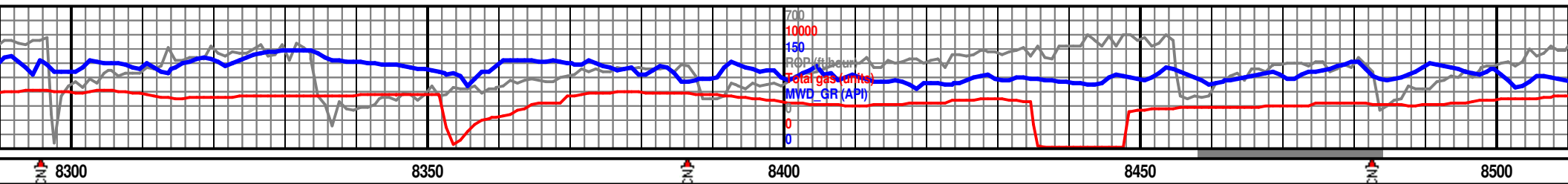
SORTING

	Well
	Moderate
	Poor







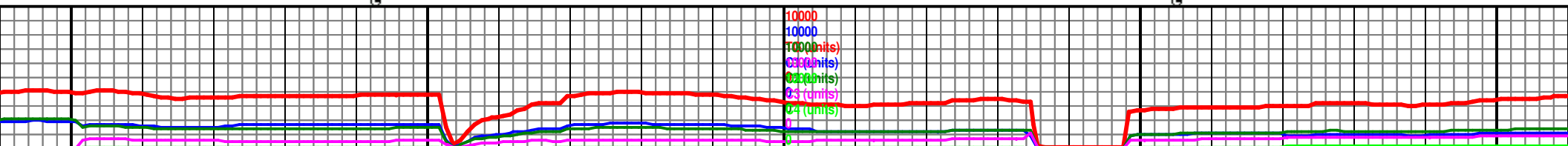


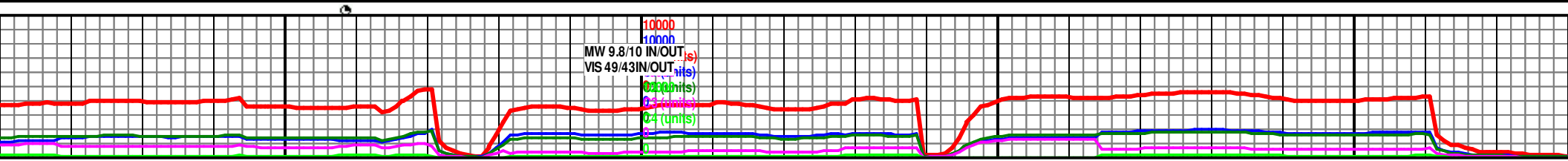
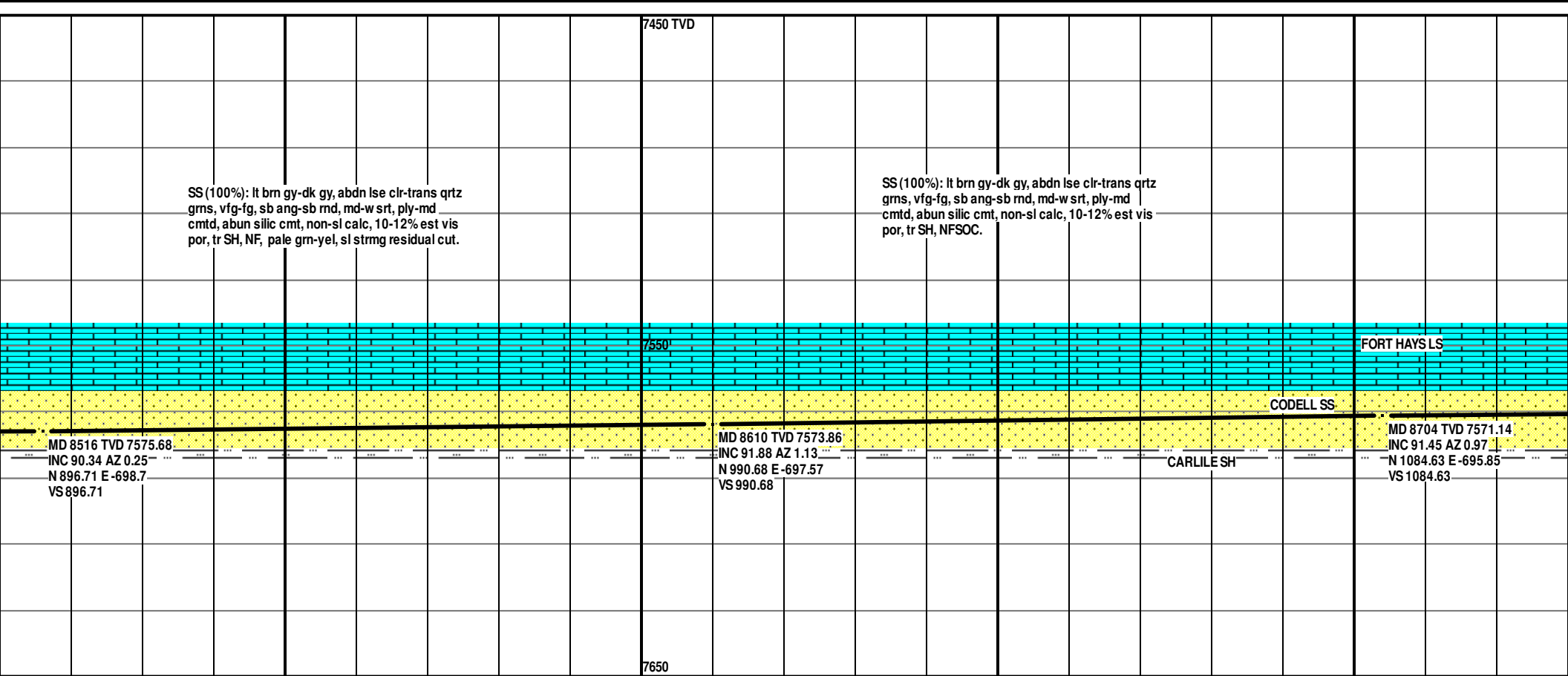
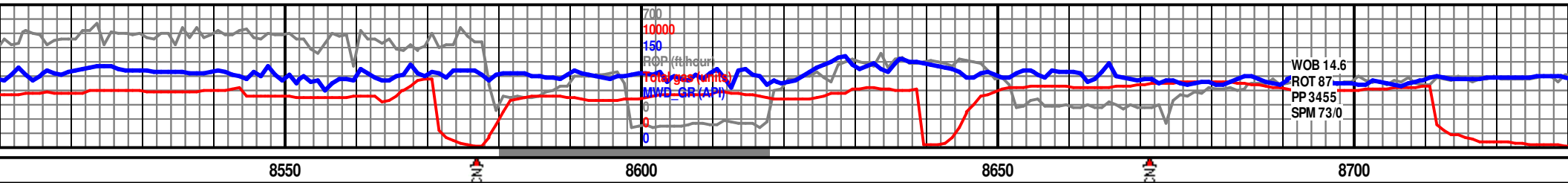
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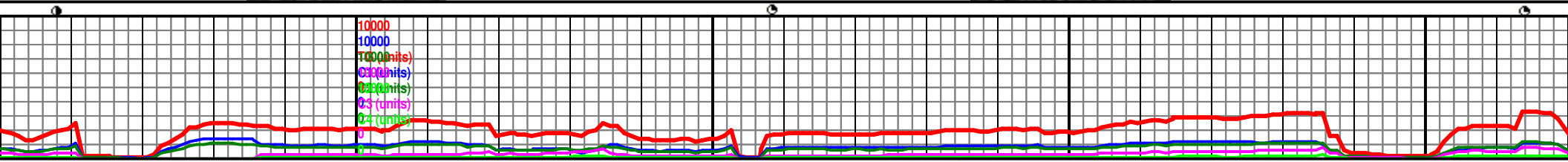
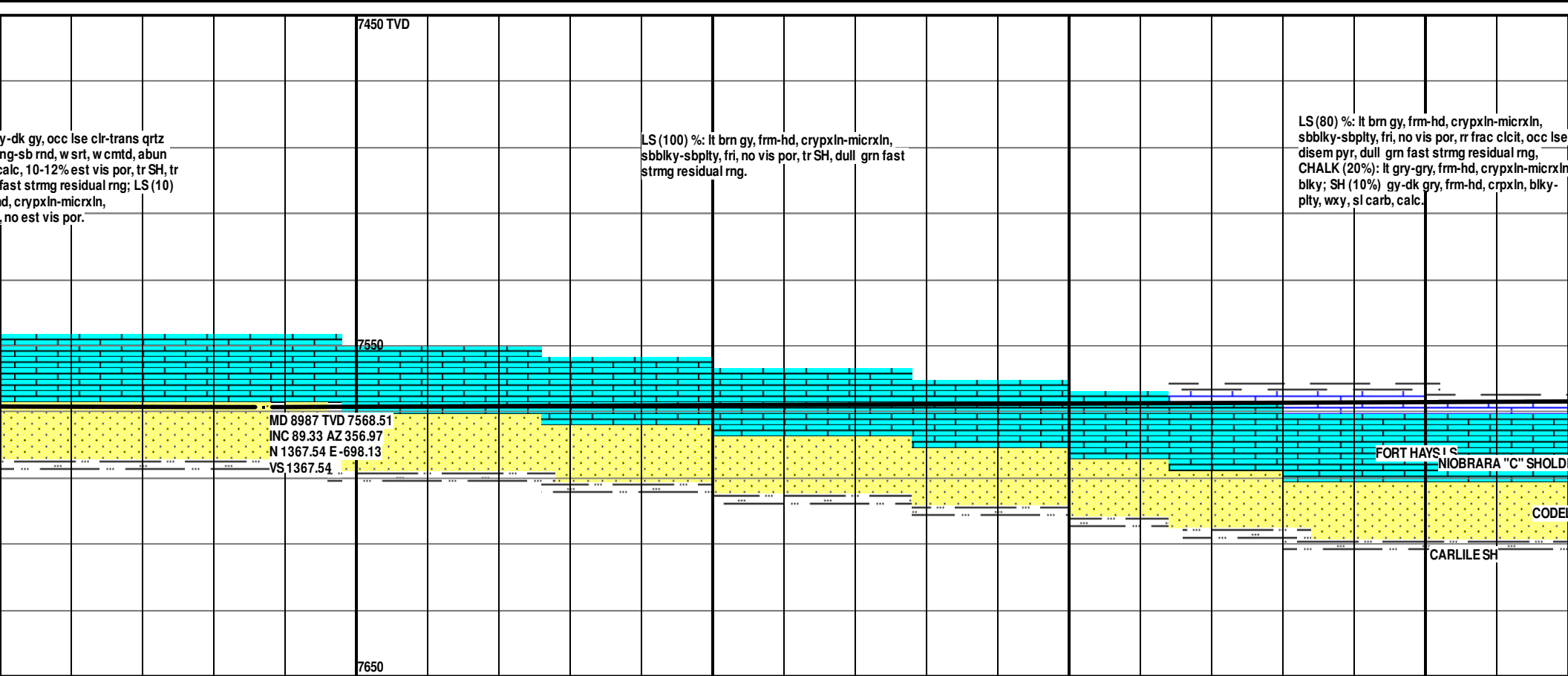
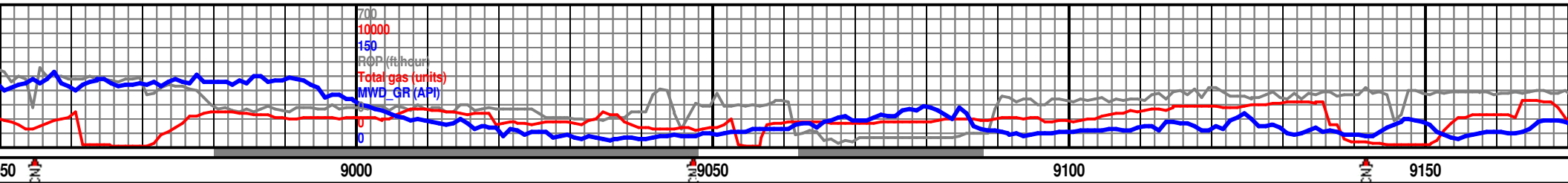
SS: (90%) gy- gysh bn-dkgysh bn - dk bn, vlf-lfg, rr ufg, m cmt, m w srt, most sbnd, occ sbang, est vis por 10-12%, SH: (10%) v dk gy-blk, frm, plty, fiss, sb wxy-wxy, n slty, slt carb, NSF, slw mlky cut, fr rsd rng flor.

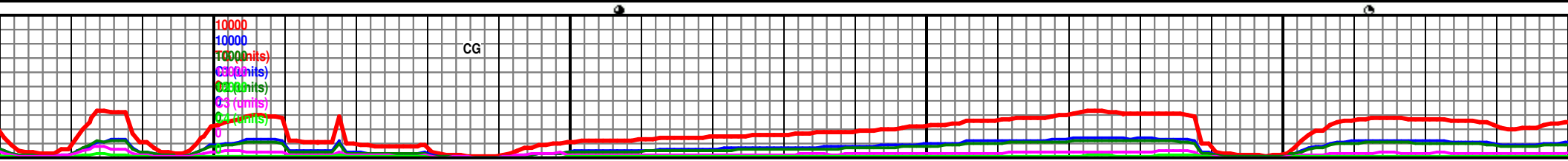
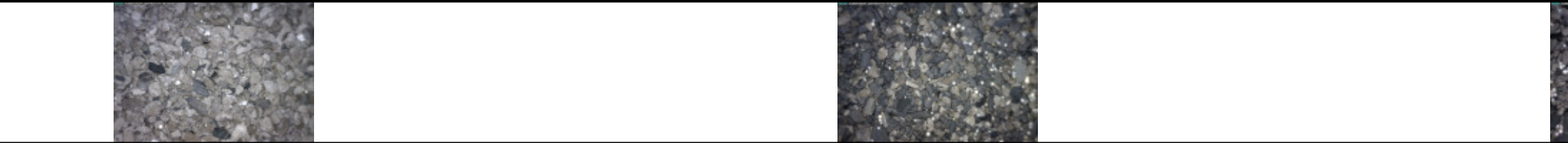
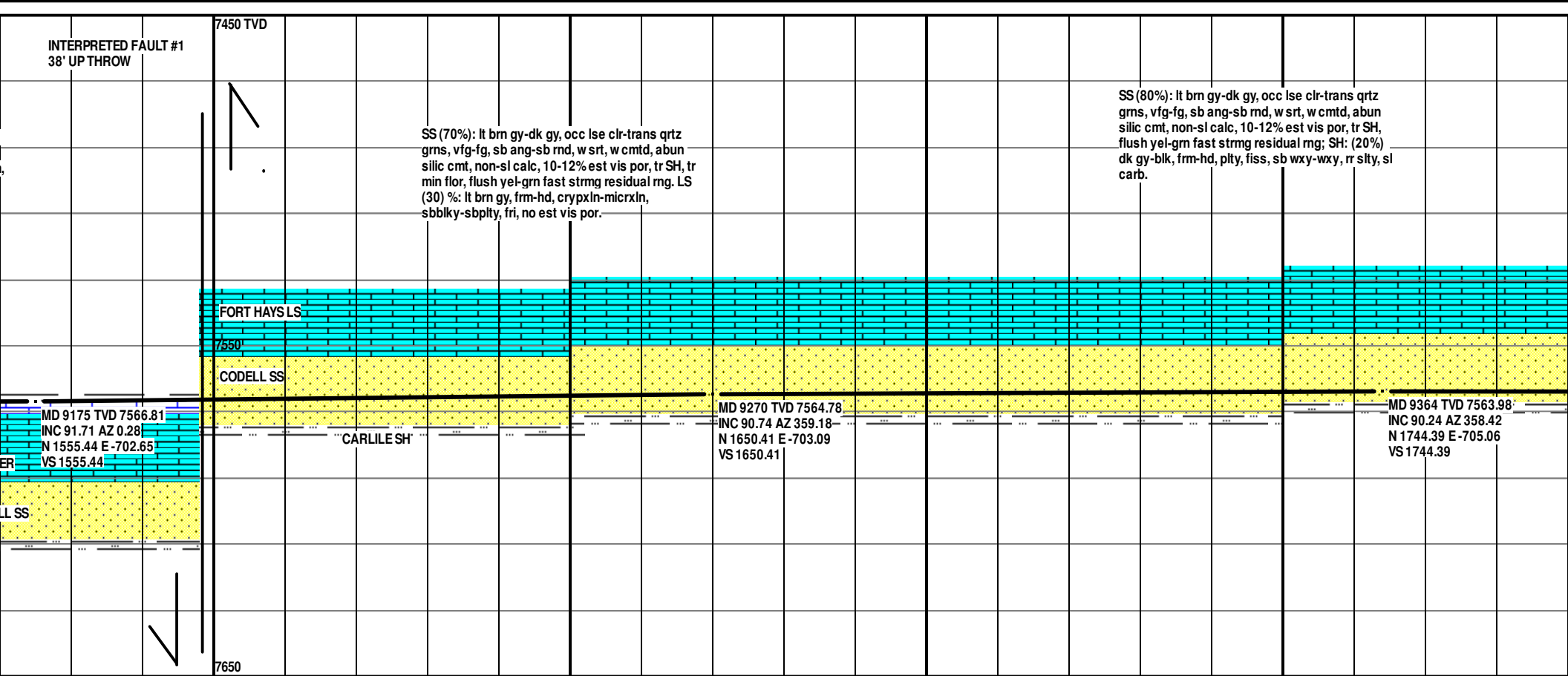
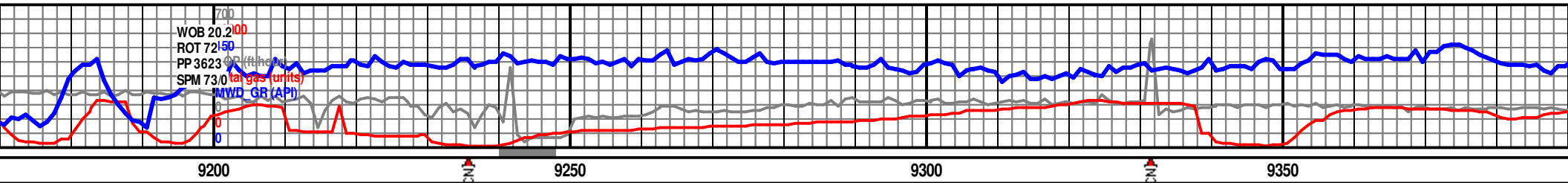
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INC 91.11 AZ 1.68
N 707.77 E -702.24
VS 707.77

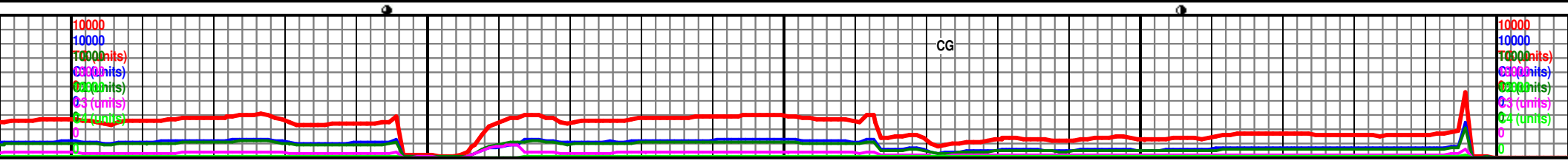
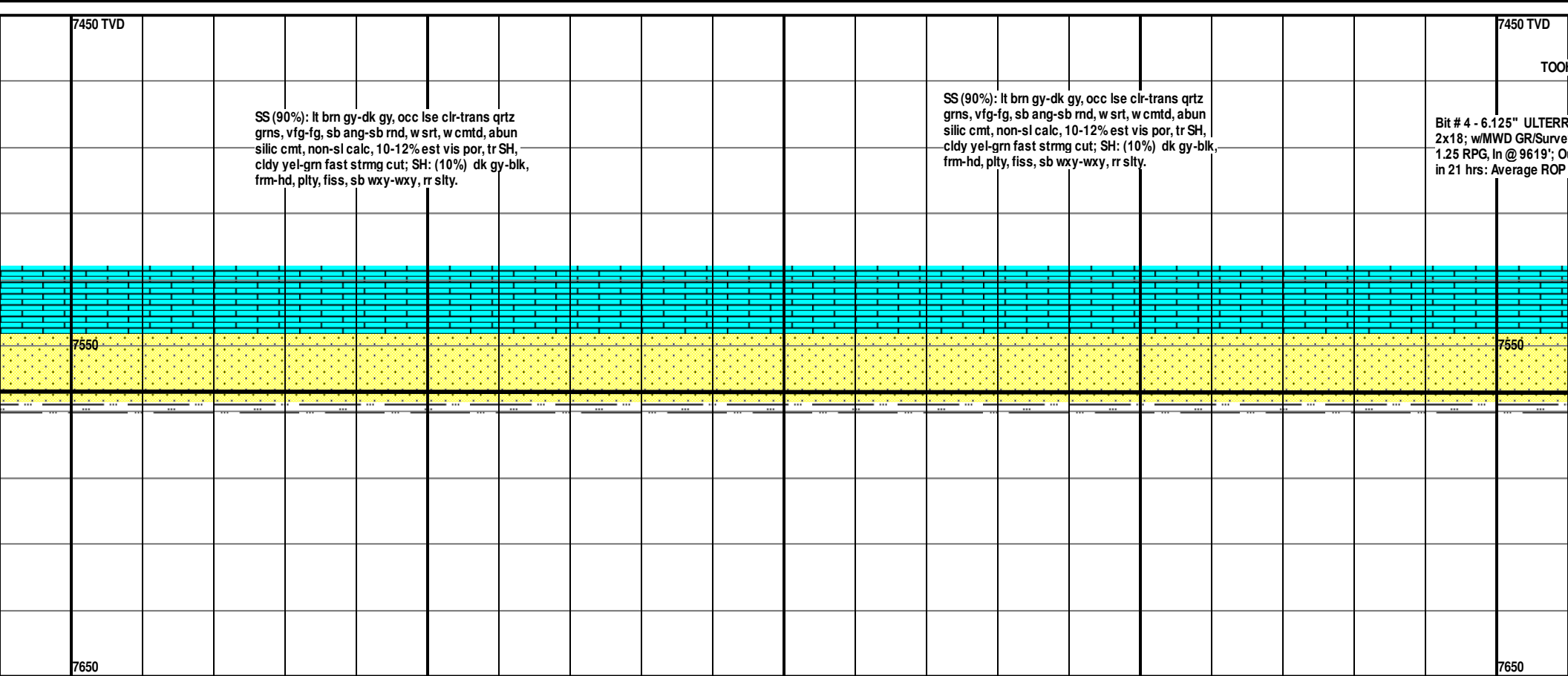
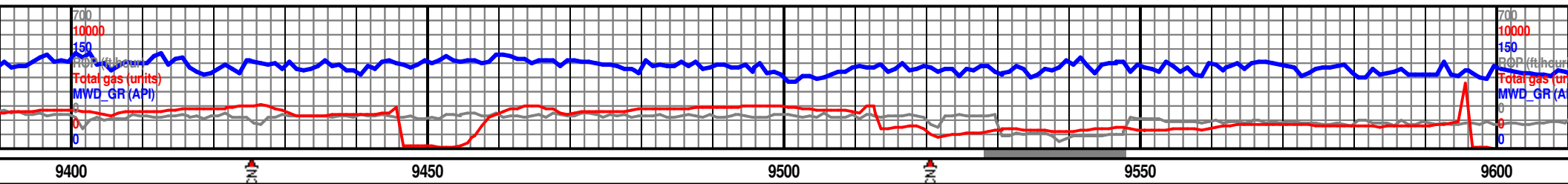
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INC 90.81 AZ 1.18
N 801.72 E -699.89
VS 801.72

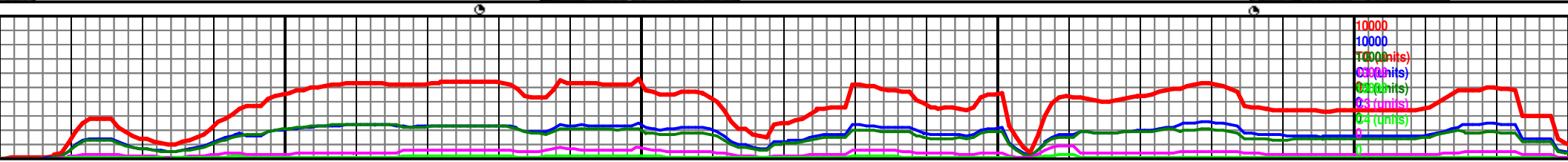
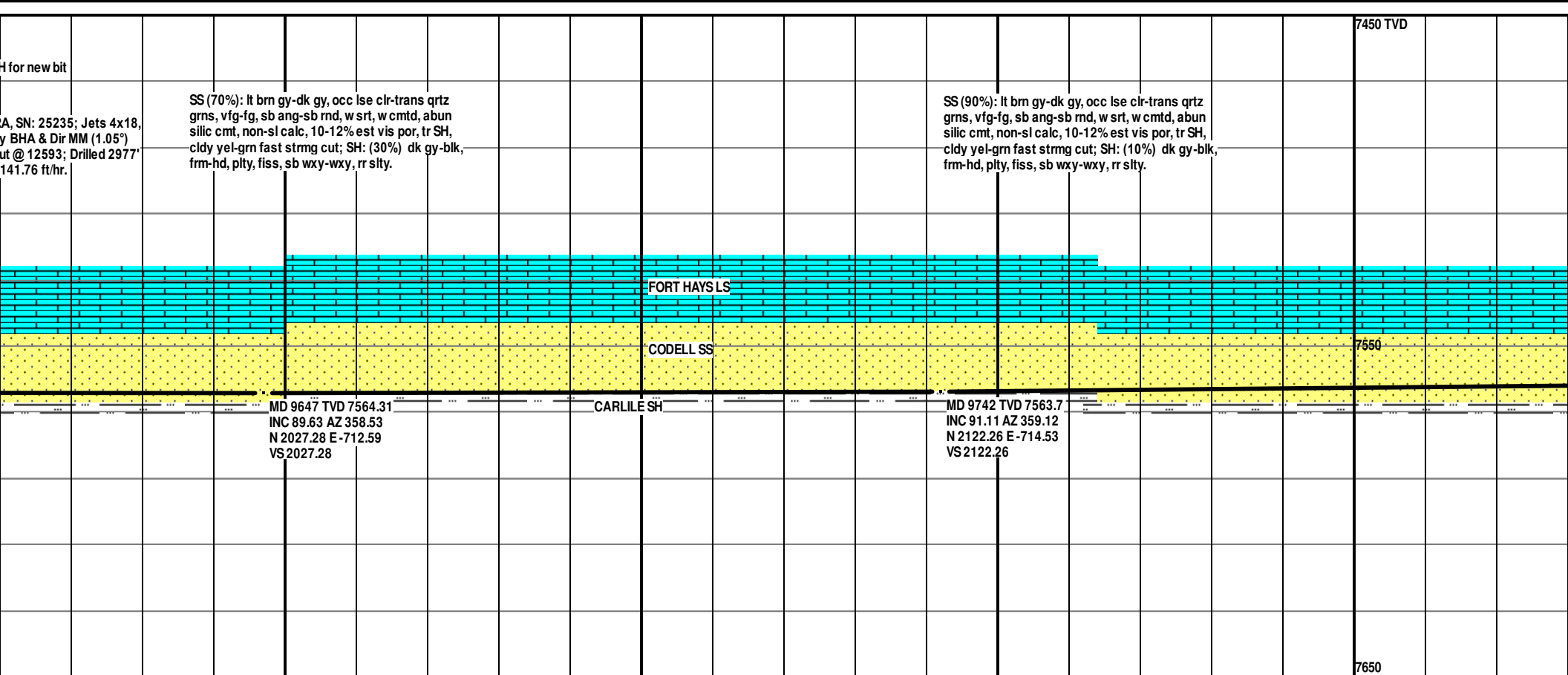
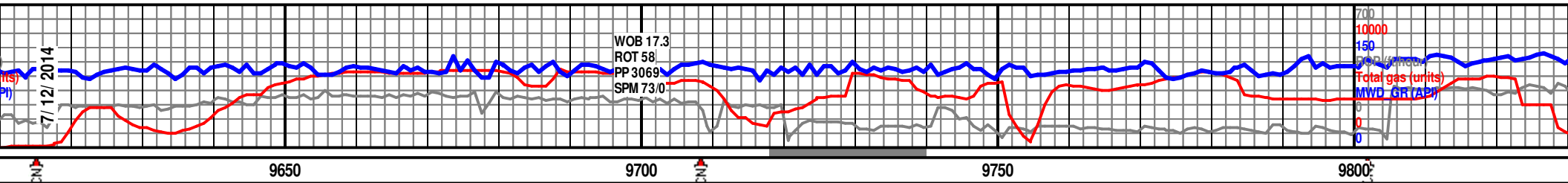


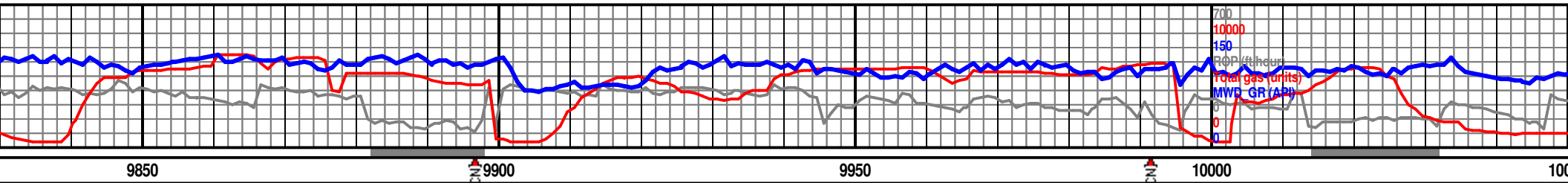








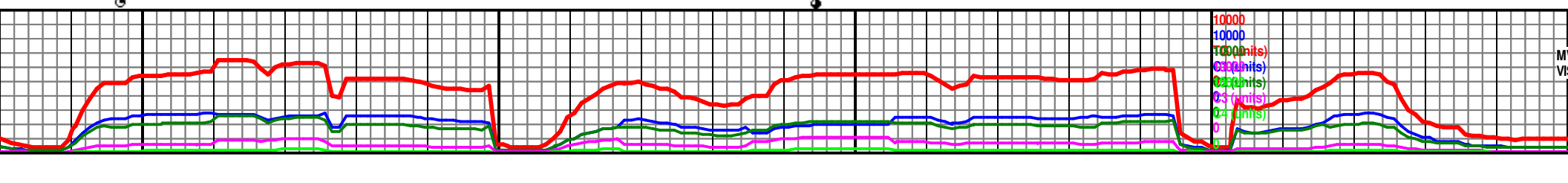
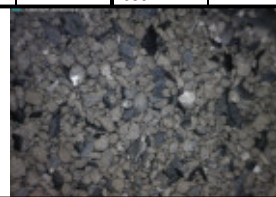
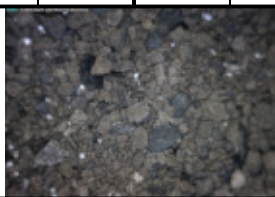
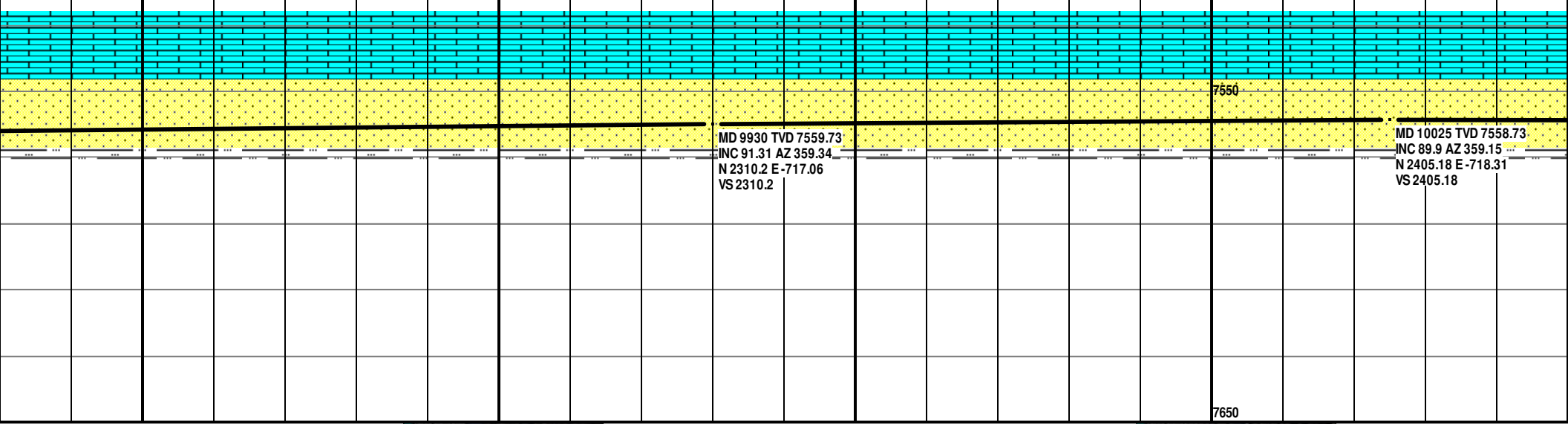


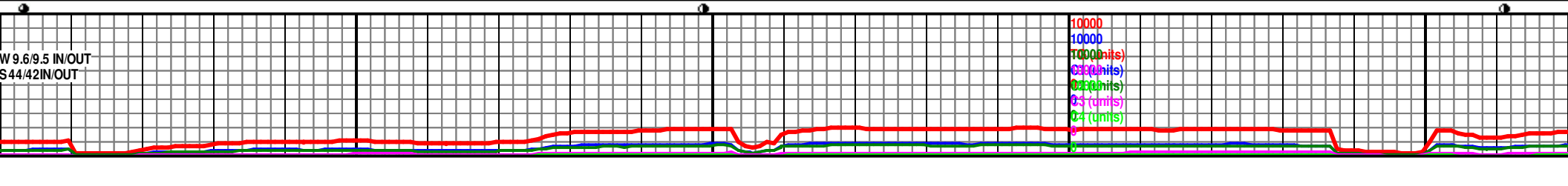
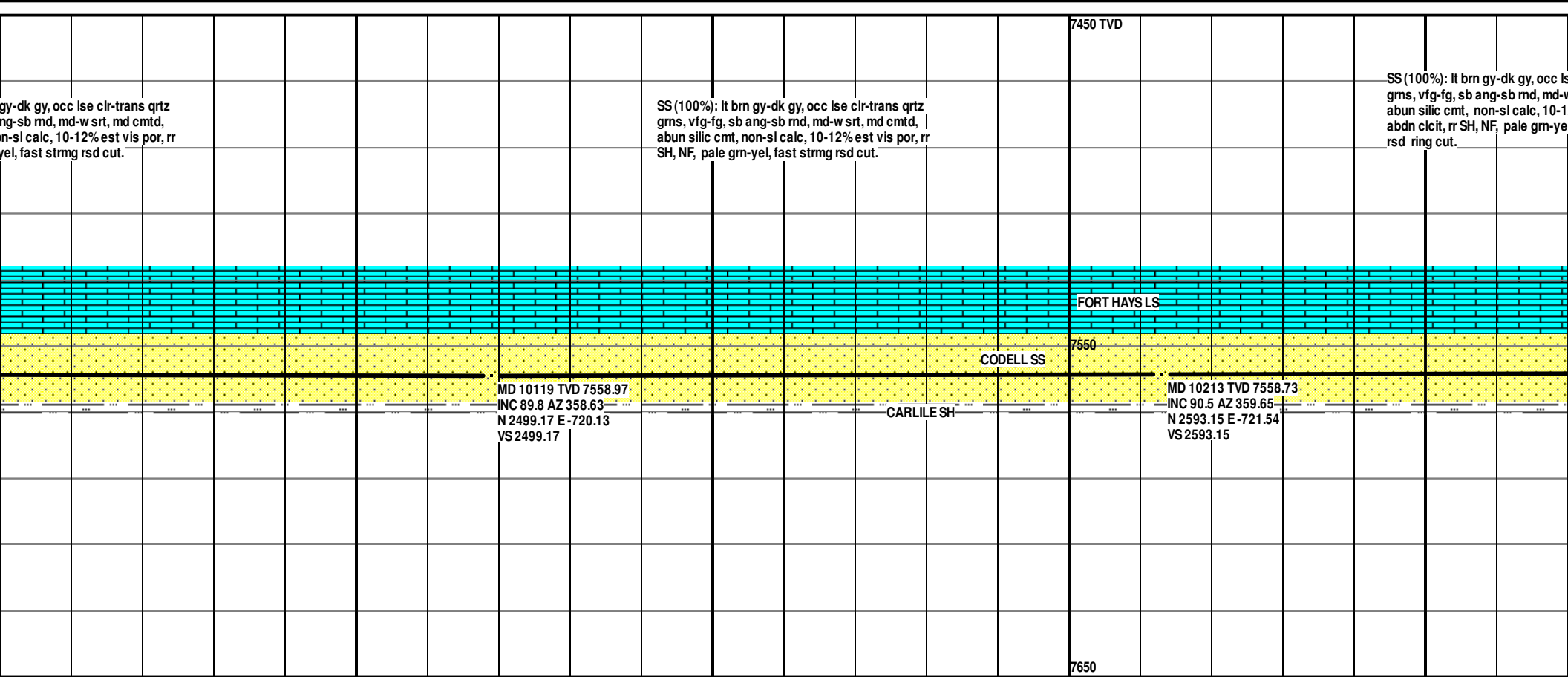
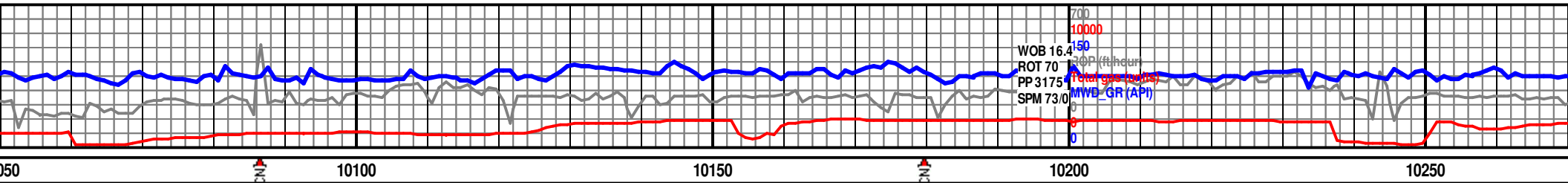


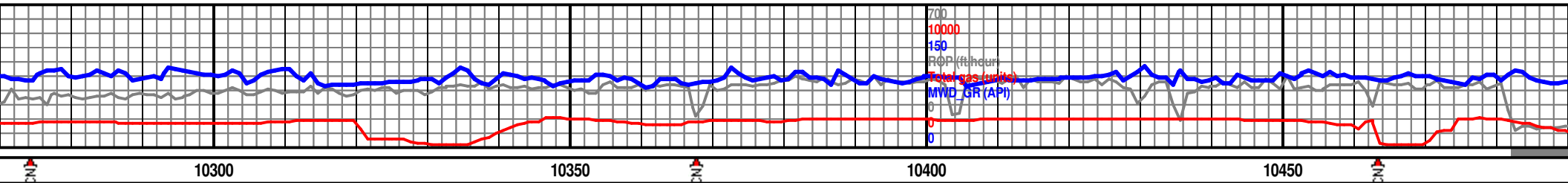
SS (90%): lt brn gy-dk gy, occ lse clr-trans qrtz
grns, vfg-fg, sb ang-sb md, w srt, w cmt, abund
silic cmt, non-sl calc, 10-12% est vis por, tr SH,
cldy yel-grn fast strmg cut; SH: (10%) dk gy-blk,
frm-hd, plty, fiss, sb wxy-wxy, rr slty.

SS (80%): lt brn gy-dk gy, occ lse clr-trans qrtz
grns, vfg-fg, sb ang-sb md, md-w srt, md cmt,
abund silic cmt, sl calc, 10-12% est vis por, tr SH,
NF, pale gm-yel, wk&fast strmg residual cut; -
SH: (20%) lt gy-gry, frm-hd, plty, fiss, sb
wxy-wxy, rr slty, sl carb.

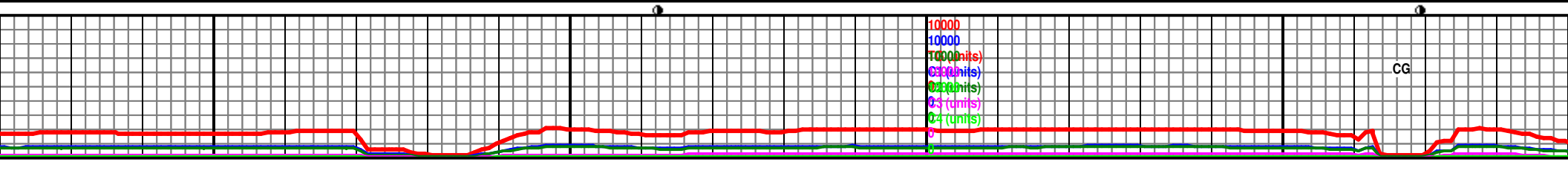
SS (100%): lt brn
grns, vfg-fg, sb a
abund silic cmt, no
SH, NF, pale gm-y

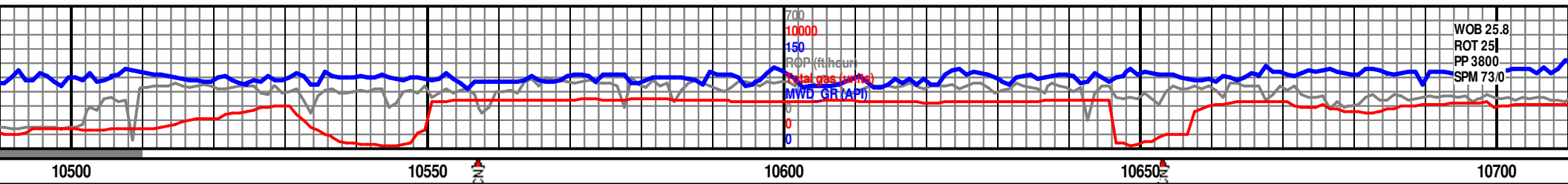






SS (100%): lt brn gy-dk gy, rr lse clr-trans qrtz grms, vfg-fg, sb ang-sb rnd, md-w srt, md-w cmt, abun silic cmt, non-sl calc, 10-12% est vis por, abdn clcit, rr SH, NF, flush grn-yel, fast strmg rsd ring cut.										7450 TVD	SS (100%): lt brn gy-dk gy, rr lse clr-trans qrtz grms, vfg-fg, sb ang-sb rnd, md-w srt, md-w cmt, abun silic cmt, non-sl calc, 10-12% est vis por, abdn clcit, rr SH, NF, flush grn-yel, fast strmg rsd ring cut.										7550
MD 10307 TVD 7558.26 INC 90.07 AZ 358.62 N 2687.14 E-722.96 VS 2687.14											MD 10402 TVD 7558.06 INC 90.17 AZ 357.75 N 2782.09 E-725.98 VS 2782.09										7650





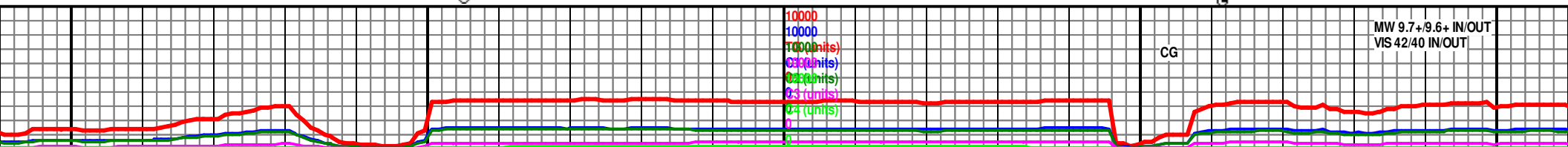
SS (90%): lt brn gy-dk gy, occ lse clr-trans qrtz
grms, vfg-fg, sb ang-sb rnd, w srt, w cmt, abun
silic cmt, non-sl calc, 10-12% est vis por, tr clcit,
pale yel-gm fast strmg cut; SH: (10%) gy-dk gry,
frm-hd, plty-splty, wxy-rthy, rr slty.

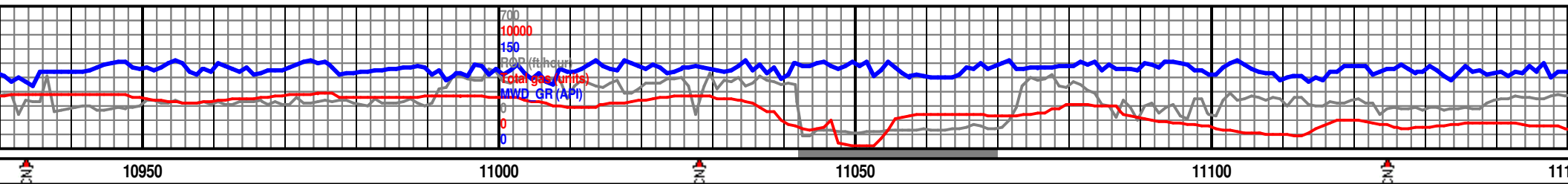
SS (90%): lt brn gy-dk gy, occ lse clr-trans qrtz
grms, vfg-fg, sb ang-sb rnd, w srt, w cmt, abun
silic cmt, non-sl calc, 10-12% est vis por, wk &
dull yel-gm fast strmg cut; SH: (10%) gy-dk gry,
frm-hd, plty-splty, wxy-rthy, rr slty.

FORT HAYS

MD 10590 TVD 7558.5
INC 89.56 AZ 358.99
N 2970.01 E -731.32
VS 2970.01

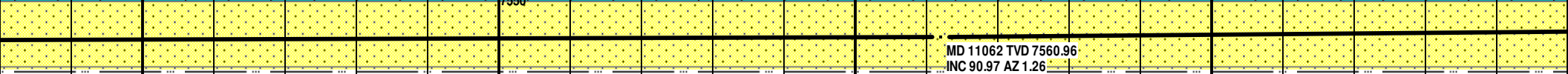
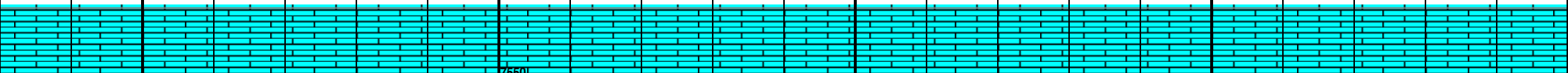
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INC 88.83 AZ 357.57
N 3064.95 E -734.17
VS 3064.95



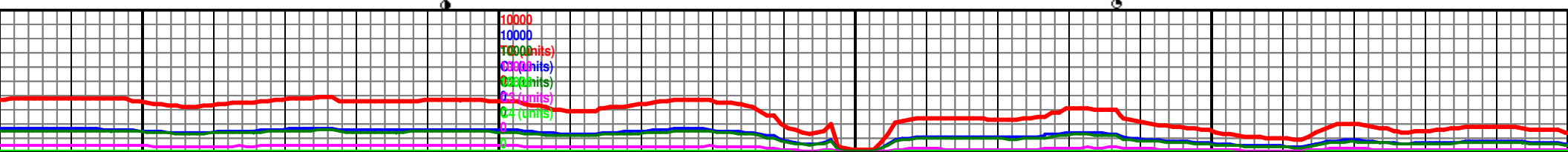


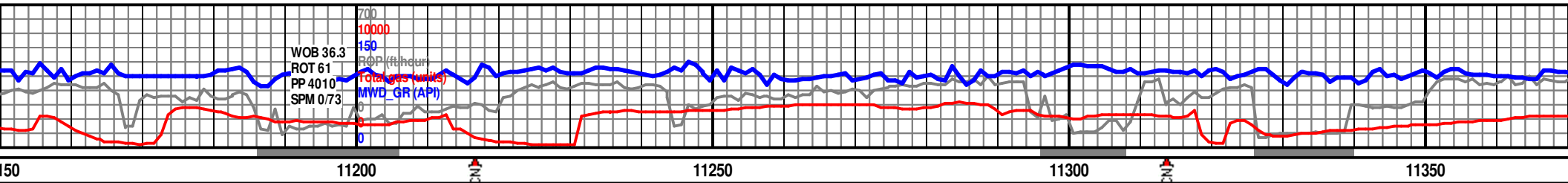
SS (95%): lt brn gy-dk gy, abdn clr-trans, vfg-fg, sb ang-sb rnd, md-ply srt, md-w cmt, abun silic cmt, 10-12% est vis por, abdn pyr, NF, flush fast strmg residual ring cut; SH(<5%) dk gry-blk, frm-hd, plty-sply, slty.

SS (90%): lt brn gy-dk gy, abdn clr-trans, vfg-fg, sb ang-sb rnd, md-ply srt, md-w cmt, abun silic cmt, 10-12% est vis por, abdn pyr, NF, flush fast strmg rsd ring cut; SH(10%) dk gry-blk, frm-hd, plty-sply, slty.



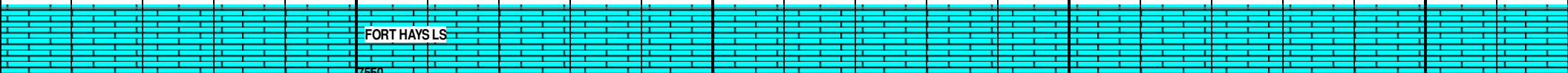
MD 11062 TVD 7560.96
INC 90.97 AZ 1.26
N 3441.89 E -733.89
VS 3441.89





SS (90%): lt brn gy-dk gy, abdn clr-trans, vfg-fg, sb ang-sb rnd, md-ply srt, md-w cmt, abun silic cmt, 10-12% est vis por, occ pyr, NF, cldy fast strmg rsd ring cut; SH(10%) lt gry-dk gry, frm-hd, plty-splty, slty.

SS (90%): lt brn gy-dk gy, abdn clr-trans, vfg-fg, sb ang-sb rnd, md-ply srt, md-w cmt, abun silic cmt, 10-12% est vis por, rr pyr, NF, flush fast strmg rsd ring cut; SH(10%) lt gry-dk gry-blk, frm-hd, plty-splty, slty.

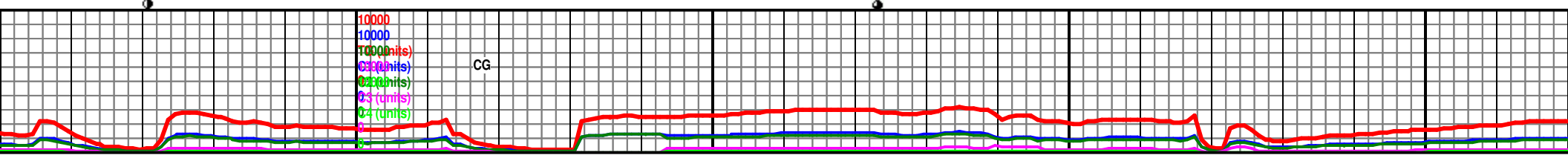
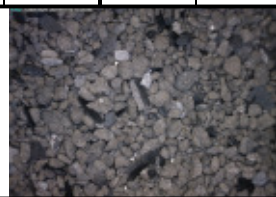
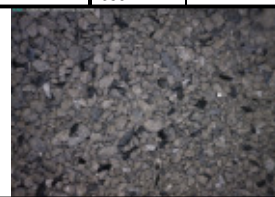


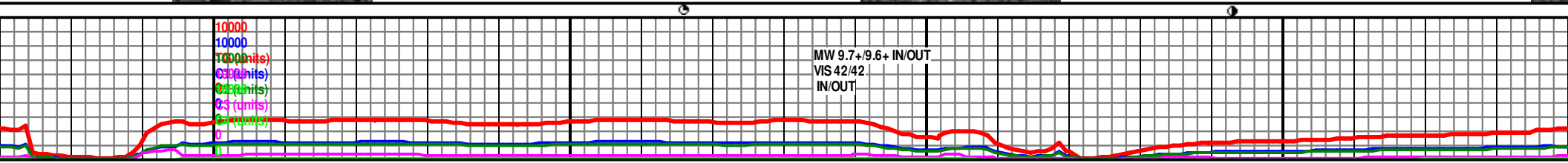
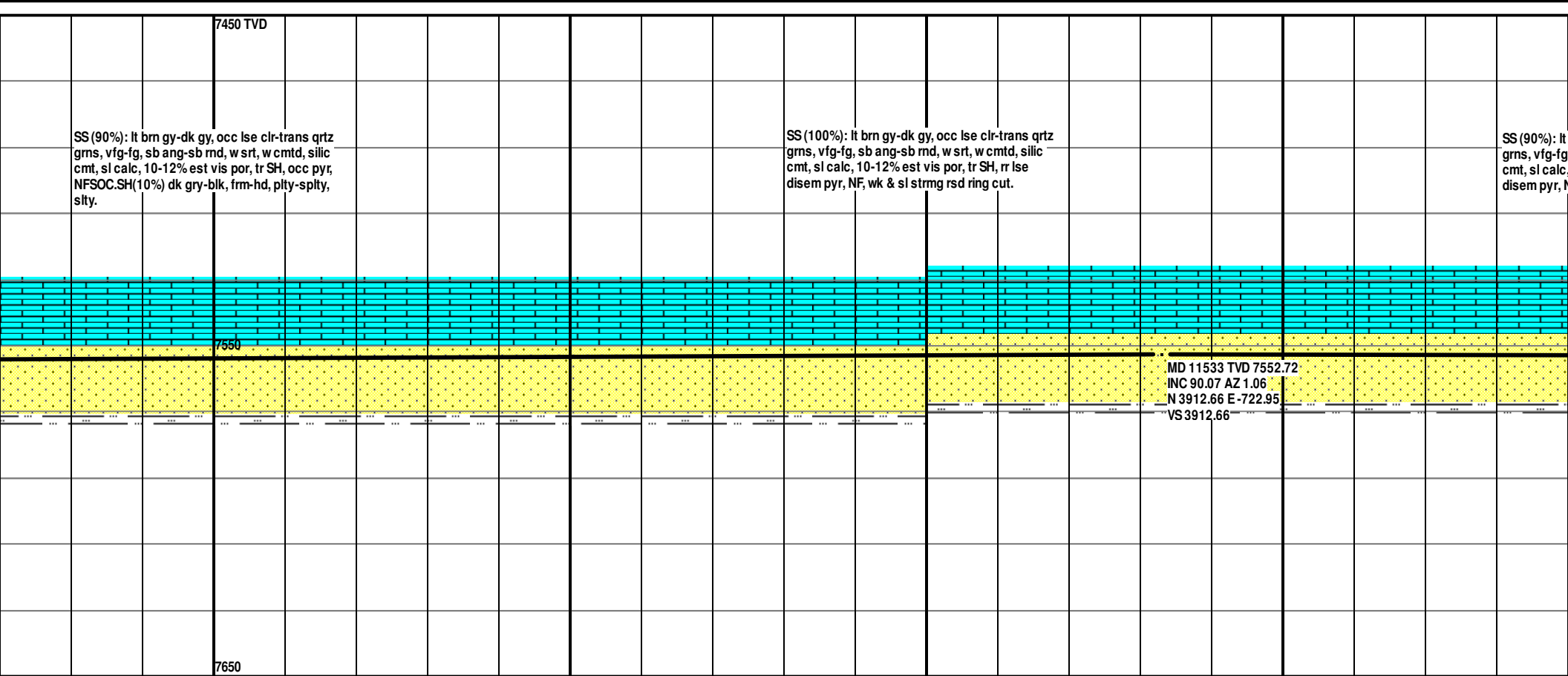
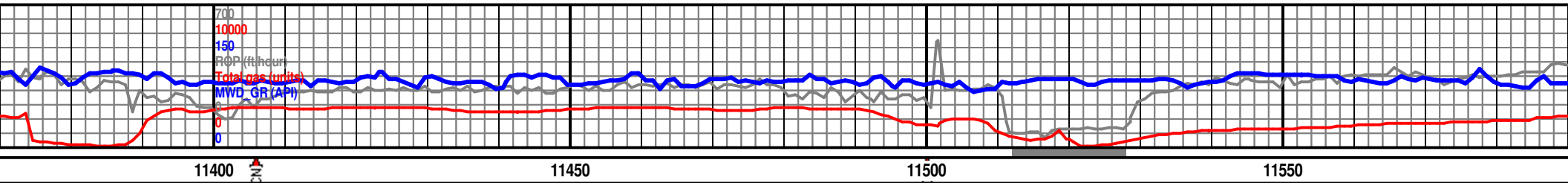
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INC 91.17 AZ 1.84
N 3535.83 E-731.35
VS 3535.83

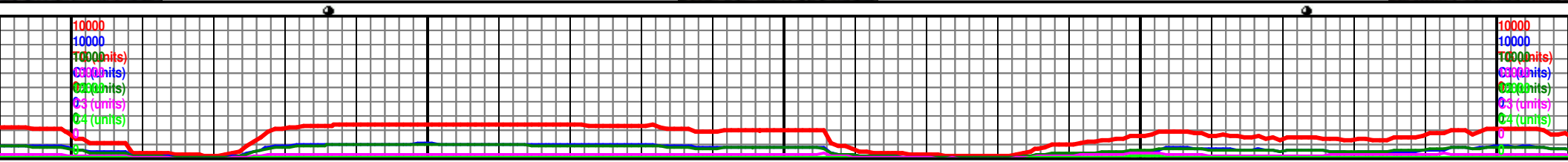
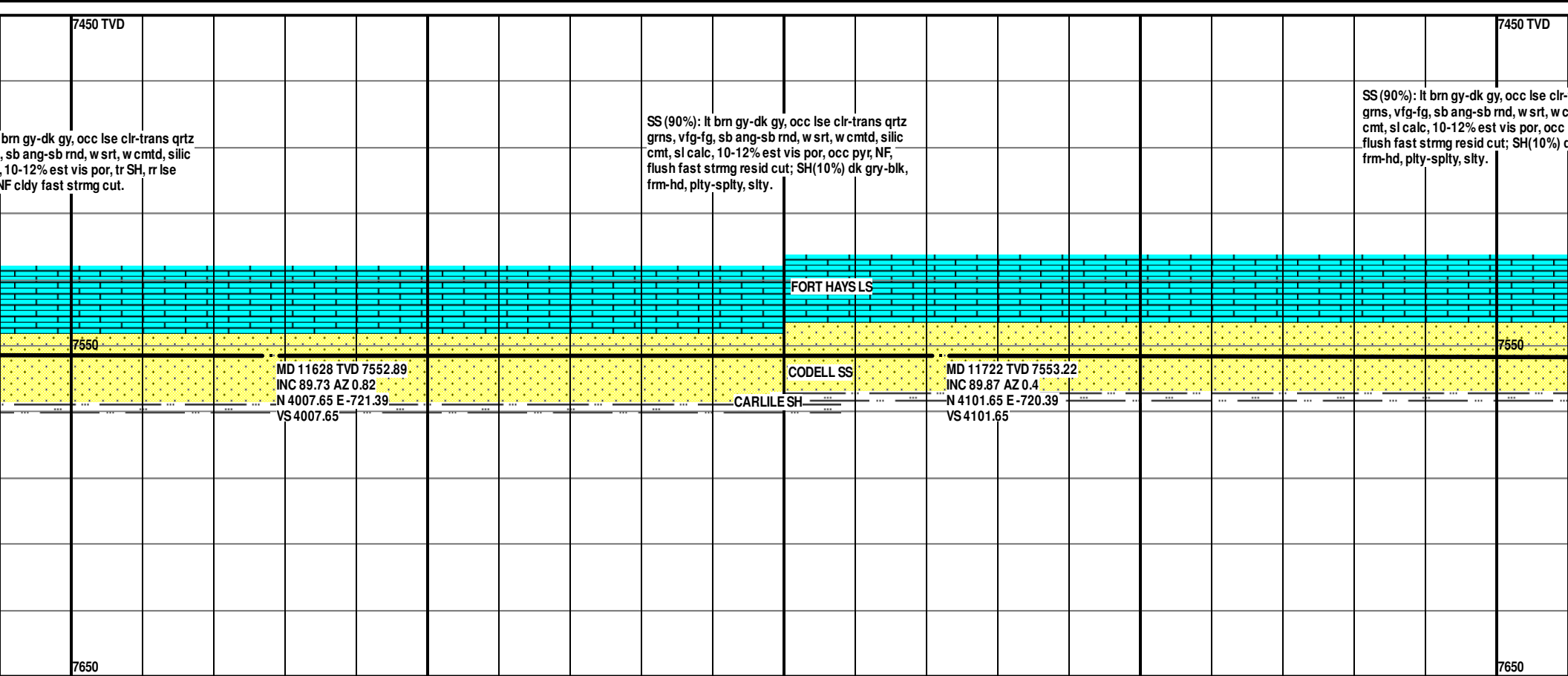
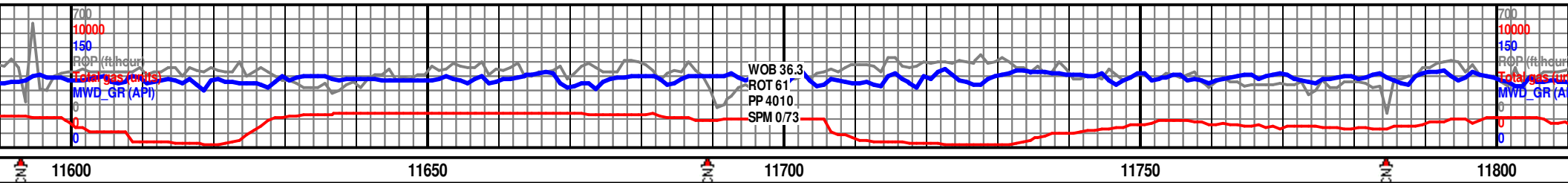
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INC 91.82 AZ 1.6
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VS 3630.76

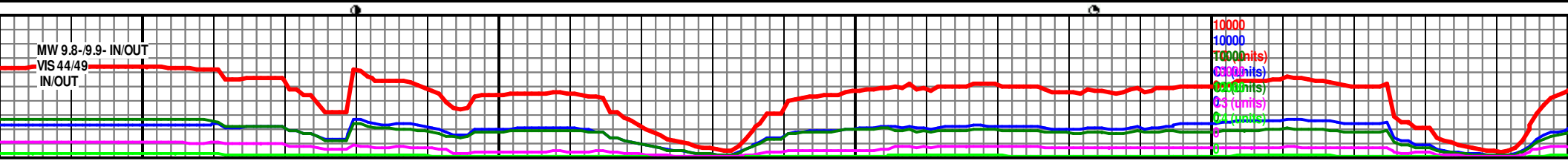
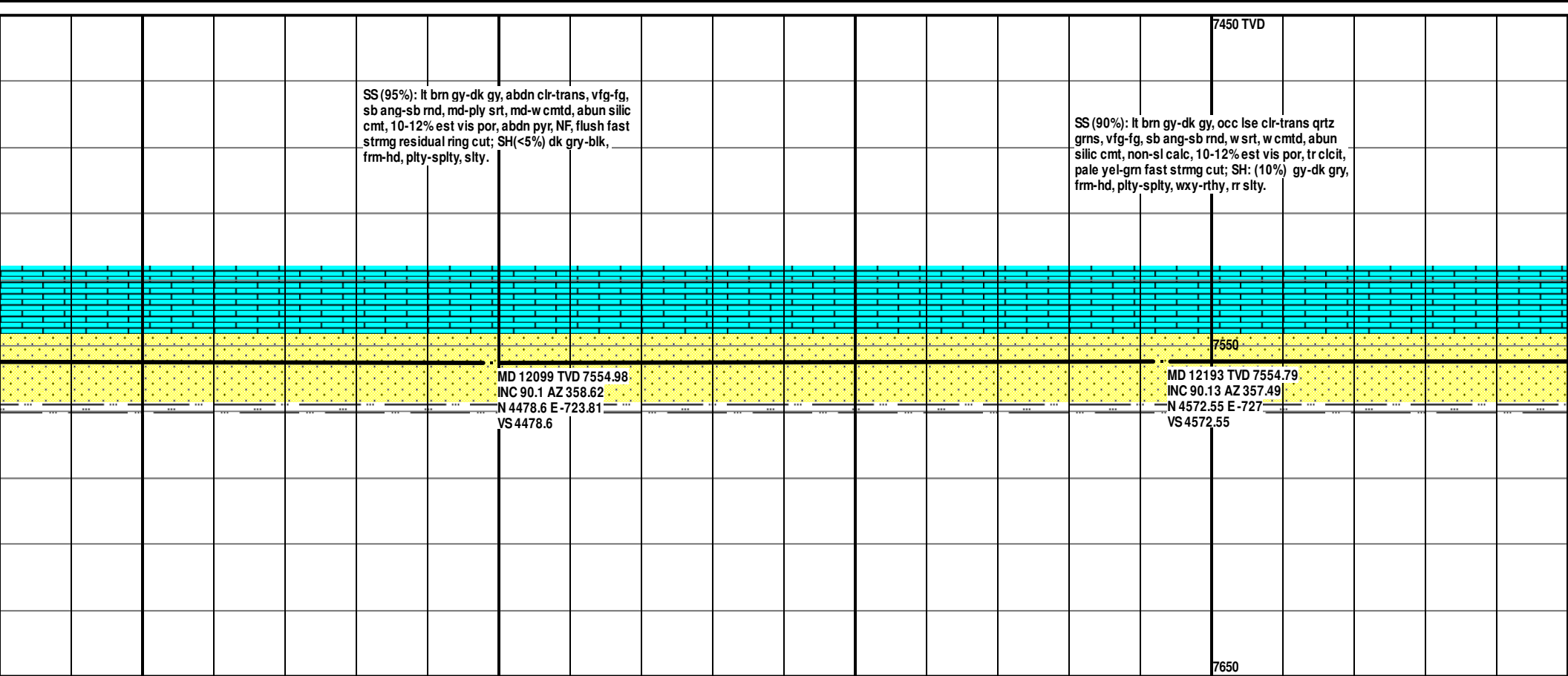
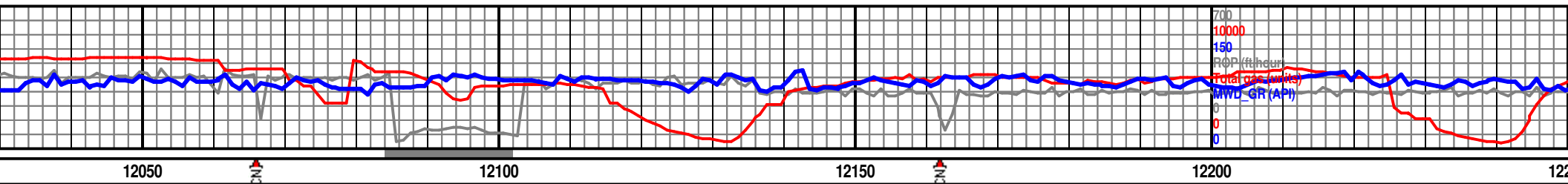
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INC 90.98 AZ 1.02
N 3724.71 E-726.36
VS 3724.71

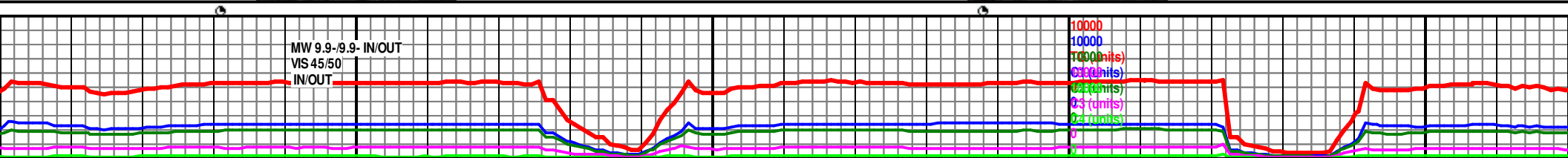
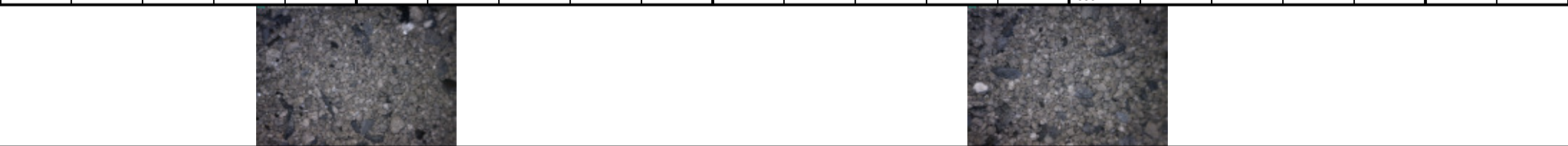
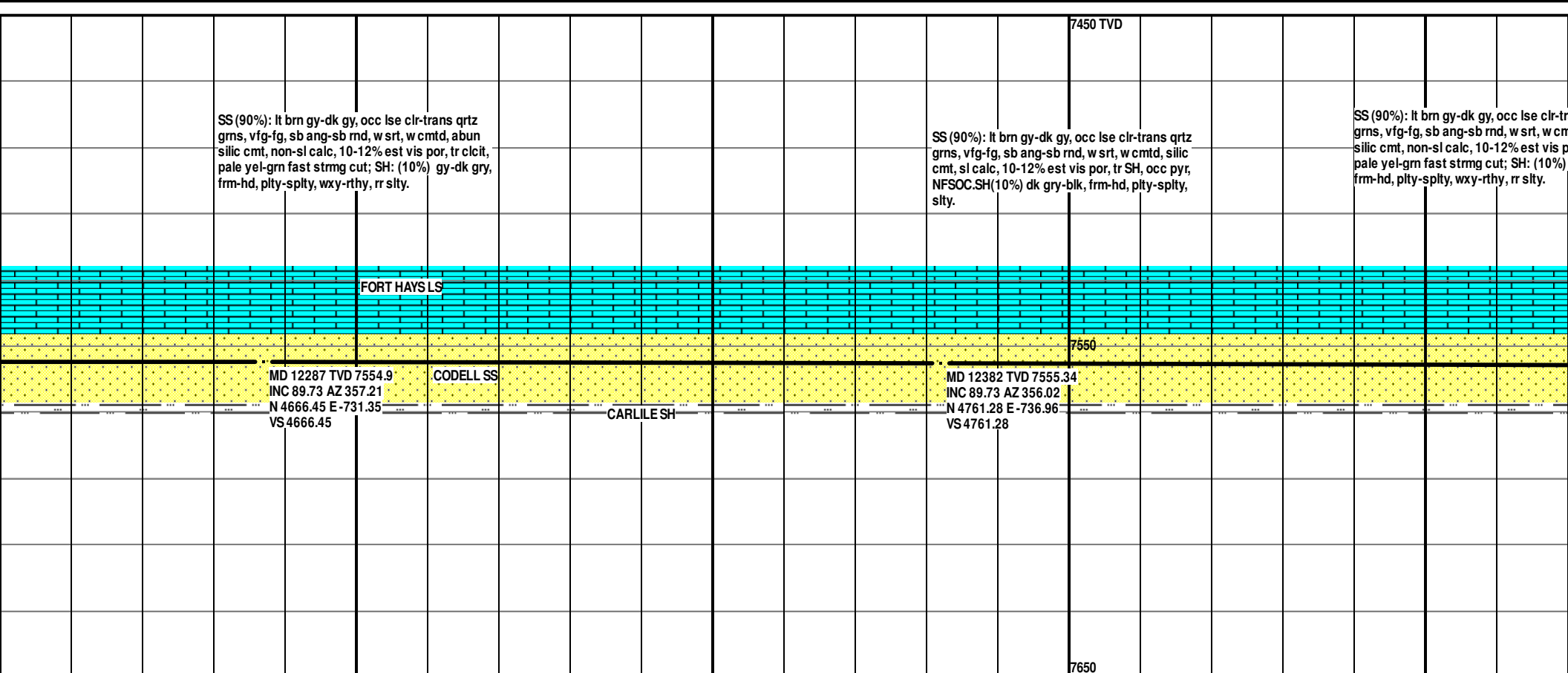
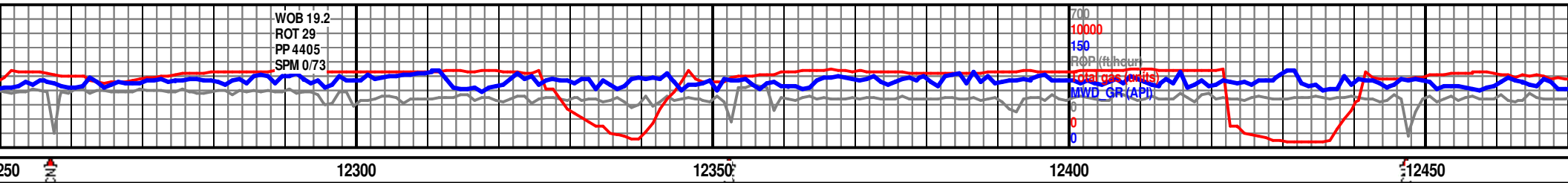
CARLILESH

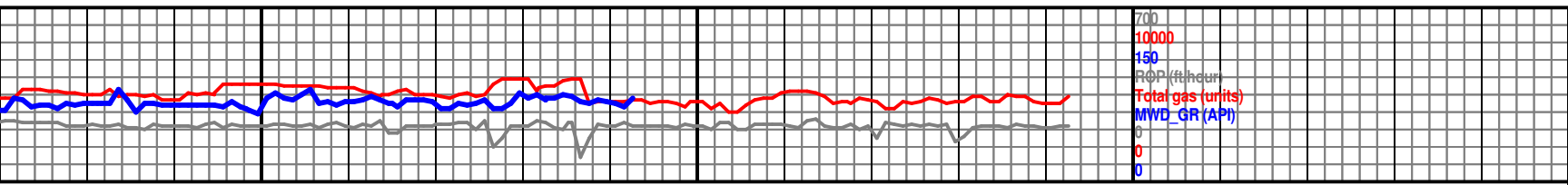












12500

12550

12600

12

ans qrtz
td, abun
or, tr clcit,
gy-dk gry,

SS (90%): lt brn gy-dk gy, occ lse clr-trans qrtz
grms, vfg-fg, sb ang-sb md, w srt, w cmted, abun
silic cmt, non-sl calc, 10-12% est vis por, tr clcit,
pale yel-gm fast strmg cut; SH: (10%) gy-dk gry,
frm-hd, pity-sply, wxy-rthy, rr slty.

TD 12593' MD @ 21:40 hours,
07/12/2014

(GOOLSBY BROTHERS & ASSOCIATES)

FORT HAYS LS

CODELL SS

CARLILE SH

Projection to bit

MD 12593 TVD 7556.25
INC 89.73 AZ 356.02
N 4761.28 E -736.52
VS 4971.81

4.5" production liner set and cemented at
12593', WT: 11.6 ppf; Grade: HCP110 on June
14, 2014.



MW 9.8-9.9- IN/OUT
VIS 45/49
IN/OUT

10000
10000
10000 (units)
0.1 (units)
0.2 (units)
0.3 (units)
0.4 (units)
0
0